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1: Lymphokine Res. 1987 Fall;6(4):309-18.

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Antiviral effects of recombinant human tumor necrosis factor.

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The antiviral action of recombinant human tumor necrosis factor (TNF) was studied using assay systems to determine inhibition of viral cytopathic effect (CPE), as well as suppression of virus growth measured by plaque assays. TNF was cloned and prepared by Asahi Chemical Industry, Japan. Antiviral activity against human herpes simplex virus (HSV) types 1 and 2, cytomegalovirus (CMV), varicella-zoster virus (VZ), vesicular stomatitis virus (VSV) and encephalomyocarditis virus (EMC), was demonstrated in human diploid fibroblasts following pretreatment with TNF overnight. The antiviral action was completely neutralized by anti-interferon (IFN)-beta serum, but not by anti-IFN-alpha or -gamma antibodies. This suggested the induction of IFN-beta by TNF. The antiviral action was synergistically enhanced by human IFN-gamma. Several non-human cell lines were tested but 10 of 11 failed to be protected from VSV- and/or EMC-induced CPE following pretreatment by TNF. The anticellular effects of TNF were tested in human and in non-human tumor cell lines. The results indicate that the susceptibility of cells to the two activities of TNF, antiviral and anticellular, was distinct, and that antiviral activity of TNF is more species-specific than its anticellular action.

PMID: 2448553 [PubMed - indexed for MEDLINE]

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